

Application No. 10/755,932

Reply to Office Action

*REMARKS*

Applicants have carefully reviewed and considered the Office Action dated May 31, 2007 and the references cited therein. Applicants have amended claim 1 to improve its form and added new claims 5-8 to further define the invention. Pending claims 1-4 stand rejected under 35 U.S.C. § 103 as obvious in view of Siczek (U.S. Patent 5,803,912) combined with Gilboa (U.S. Patent 6,380,732). Applicants respectfully traverse this rejection. Applicants believe the application is now in condition for allowance. Accordingly, favorable reconsideration in light of the foregoing amendments and following remarks is respectfully requested.

In rejecting claims 1-4, the Examiner has indicated that Siczek teaches a manipulator for performing medical procedures that includes a positioning mechanism and a position tracking system capable of tracking the position of the medical tool relative to a predetermined frame of reference in three dimensions. The Examiner acknowledges that Siczek does not teach a position tracking system including an electromagnetic field generator, but asserts that it would have been obvious to use the tracking system of Gilboa in the place of the position tracking system of Siczek.

Applicants respectfully submit that the combination of Siczek and Gilboa is not well taken. Specifically, as an initial matter, Siczek does not teach a remote position tracking system capable of tracking the position of its biopsy needle in three dimensions. Rather, what Siczek discloses is a biopsy needle positioning mechanism, which does not directly track the position of the biopsy needle. In particular, positional feedback is provided to the biopsy needle positioning motor controller via the three DC motors 12, 14 and 16 (see col. 5, lines 23-25). Thus, Siczek is sensing the position of the motors, not tracking the position of the biopsy needle itself. Moreover, using the motor controller to track the position of the DC motors cannot be considered a remote position tracking mechanism since it is completely integrated into the positioning mechanism itself.

Siczek also discloses using a film digitizer and coordinates calculator to digitize a point of reference in a patient's breast using two X-ray images of the breast and to thereafter compute and display the three dimensional coordinates of the digitized point of interest (see col. 4, lines 57-63). More specifically, the imaging portion of the Siczek system works by

Application No. 10/755,932

Reply to Office Action

using the DC motors to move the needle to a specific position. Images are then taken and calculations are done to determine the position of the needle. The needle is then moved a prescribed amount based on the calculations. Another two images are then taken to determine if the position adjustment was correct. The digitizer and coordinates calculator are incapable of tracking either the reference point on the breast or the biopsy needle as it *moves*. Instead, all it does is take static images and make measurements from those images, that is cannot be considered "tracking". The system actually cannot differentiate between the reference point on the breast and the needle without input from the doctor. Since the Siczek does not provide a true position tracking system for the biopsy needle, the rejection cannot be based on a simple switching of the "tracking system" of Siczek for the tracking system of Gilboa because Siczek does not have a "tracking system" in the first instance.

Moreover, while the Siczek positioning mechanism permits limited manual movement of the biopsy needle, the key focus of the invention is the automatic positioning of the needle. In particular, the positioning motor controller receives the spatial coordinates of the point of interest on the breast from the digitizer and coordinates calculator and directs the three DC motors so as to automatically position the biopsy needle for insertion into the point of interest (see col. 5, lines 47-53). Thus, there is no need to precisely track the position of the biopsy needle as it *moves* since the positioning mechanism is designed to automatically move the biopsy needle to the precise point of interest based on the coordinates generated by the digitizer and coordinates calculator. Providing the Siczek positioning mechanism with a non-contact tracking system such as disclosed in Gilboa to track the position of the biopsy needle is unnecessary. The encoders or the like on the motors that provide the position feedback on the motor positions to the motor controller are all that is needed to control the automatic movement of the biopsy needle to the desired coordinates. Since the tracking system of Gilboa would provide no useful functionality in terms of the automatic positioning of the biopsy needle, which will work with or without the Gilboa tracking system, there is no good reason for combining the references in the manner proposed by the Examiner. As such, claims 1-4 are patentable over the Siczek and Gilboa references.


Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the

Application No. 10/755,932

Reply to Office Action

prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,

  
Gregory C. Bays, Reg. No. 40,505  
LEYDIG, VOIT & MAYER, LTD.  
Two Prudential Plaza, Suite 4900  
180 North Stetson Avenue  
Chicago, Illinois 60601-6731  
(312) 616-5600 (telephone)  
(312) 616-5700 (facsimile)

Date: November 30, 2007